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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,023	06/21/2001	Takehito Kimata	2635-22	4404

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EXAMINER

CYGAN, MICHAEL T

ART UNIT

PAPER NUMBER

2855

DATE MAILED: 03/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/885,023

Applicant(s)

KIMATA ET AL.

Examiner

Michael Cygan

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8, 19 and 20 is/are allowed.
- 6) ☒ Claim(s) 9-12 and 14-18 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 9-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noda (EP 932,039 A2). The limitations "at said proximal end" and "at said distal end" in claims 1 and 6, and the limitation "at opposite ends" in claims 9, 15, and 18 are read as specifying which portion of the element insertion hole the seal/filler is located at, not as claiming the presence of such seal/material extending to the physical boundaries of each end. Note that in applicant's Figure 1, the seal is at the "proximal end", but does not appear to extend to the upper boundary of the proximal end of the element insertion hole. With respect to the term "axially spaced" as used in claims 19 and 20, the larger cross-section aperture is spaced next to, but not overlapping with, the smaller cross-section aperture along the longitudinal axis, and the members are therefore axially spaced from each other (note applicant's Figure 1, in which the apertures are axially spaced next to each other).

Noda discloses a gas sensor comprising a housing [3] with an air side cover [18] attached to a proximal housing end and enclosing an aerial atmosphere, and a gas side cover [6a,6b] attached to a distal housing end and confining a measured gas; within the housing rests a cylindrical insulator [4] having a gas sensor element [2] having opposing surfaces held in a through-hole (which has differently sized diameter portions) of the insulator at the proximal end of the through-hole by a sealing element [32] and at the distal end of the through-hole by a cushion element ([34], softer than the sealing element). A method of providing such a sensor in which the sensing element is assembled in the aperture before powder [52] is thermally transformed into the rigid seal member [32] is disclosed at column 4. See Figure 1; column 3, line 44 through column 4, line 9; column 6, lines 31+.

Noda does not disclose the features pertaining to the ranges of 5N-1000N and of 10%-80%. It would have been obvious to one having ordinary skill in the art at the time the invention was made to withstand shock forces of such ranges, as Noda teaches the desirability of withstanding shock forces (column 1, lines 23-26; column 2, lines 5-9; column 5, lines 17-52), since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980). It would have been obvious to one having ordinary skill in the art at the time the

invention was made to have a filling percentage of such ranges, as Noda teaches the desirability of compressing the cushion material (column 7, lines 33-37), since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

2. Claims ~~6, 8, and~~¹⁴ 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noda (EP 932,039 A2) in view of Kuisell (US 5,817,920). Noda teaches the claimed invention except for the range of 5N-1000N and an insulator comprised of separate bodies. With respect to the range of 5N-1000N, it would have been obvious to one having ordinary skill in the art at the time the invention was made to withstand shock forces of such ranges, as Noda teaches the desirability of withstanding shock forces (column 1, lines 23-26; column 2, lines 5-9; column 5, lines 17-52), since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980). With respect to the insulator, Kuisell discloses a gas sensor having an insulator comprised of separate bodies attached at their ends by a glass spacer (Figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use an insulator comprised of separate bodies attached to each other by a spacer as taught by Kuisell in the invention

disclosed by Noda to form the insulator which holds the gas sensing element, since this would result in increased shock resistance by mechanically decoupling the seal from the outer shell.

Claims 9-12, and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noda (EP 932,039 A2) in view of Kuisell (US 5,817,920). This rejection is made under the alternate interpretation of the claims in which the material would be set forth to extend to the edges of the element insertion hole.

Noda discloses a gas sensor comprising a housing [3] with an air side cover [18] attached to a proximal housing end and enclosing an aerial atmosphere, and a gas side cover [6a,6b] attached to a distal housing end and confining a measured gas; within the housing rests a cylindrical insulator [4] having a gas sensor element [2] having opposing surfaces held in a through-hole (which has differently sized diameter portions) of the insulator at the proximal end of the through-hole by a sealing element [32] and at the distal end of the through-hole by a cushion element ([34], softer than the sealing element). A method of providing such a sensor in which the sensing element is assembled in the aperture before powder [52] is thermally transformed into the rigid seal member [32] is disclosed at column 4. See Figure 1; column 3, line 44 through column 4, line 9; column 6, lines 31+.

Noda does not teach the features pertaining to the ranges of 5N-1000N and of 10%-80%. It would have been obvious to one having ordinary skill in the art at the time the invention was made to withstand shock forces of such ranges, as Noda teaches the desirability of withstanding shock forces (column 1, lines 23-26; column 2, lines 5-9; column 5, lines 17-52), since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a filling percentage of such ranges, as Noda teaches the desirability of compressing the cushion material (column 7, lines 33-37), since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Noda does not teach an insulator comprised of separate bodies. With respect to the insulator, Kuisell discloses a gas sensor having an insulator comprised of separate bodies attached at their ends by a glass spacer (Figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use an insulator comprised of separate bodies attached to each other by a spacer as taught by Kuisell in the invention disclosed by Noda to form the insulator which holds the gas

sensing element, since this would result in increased shock resistance by mechanically decoupling the seal from the outer shell.

Noda does not teach material extending to the edges of the element insertion hole. Kuisell teaches an element insertion hole [47] having therethrough a sensor element [43] supported at the proximal end by a glass seal [10] and at the distal end a cushion element [156], both of which extending to the respective edges of the element insertion hole. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use elements extending to the respective edges of the element insertion hole as taught by Kuisell in the invention disclosed by Noda to form the insulator which holds the gas sensing element, since this would result in increased shock resistance.

Allowable Subject Matter

3. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, since the prior art neither discloses nor fairly teaches an injection port in combination with the claimed limitations.
4. Claims 1-8, 19, and 20 are allowed, since the prior art neither discloses nor fairly teaches a sealing material and filler spaced apart in the claimed

configuration in combination with the other positively recited limitations of the claims.

Response to Arguments

Applicant's arguments filed 25 February 2004 have been fully considered but they are not persuasive. The rejected claims recite secure fixing at two spaced apart points. The applied art teaches nonadjacent points at the seal/insulator and cushion/insulator junctions. Claims which specified that the seal was spaced from the cushion were allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cygan whose telephone number is (571) 272-2175. The examiner can normally be reached on 8:30-6 M-Th, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2855

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Michael Cygan", with a stylized flourish at the end.

Michael Cygan
Primary Examiner
Art Unit 2855